

Appl. No. 09/465,676
Amdt. dated May 18, 2004
Reply to Office Action of March 17, 2004

REMARKS/ARGUMENTS

In the Office Action, correction was required in claim 2, this being done in the present amendment. Claims 1-9 and 12-15 were rejected under 35 USC 102 as anticipated by Meier (US 6 323 566), and claims 10-11 were rejected under 35 USC 103 as being unpatentable over Meier for the reasons set forth in the Office Action. Reconsideration of these rejections is requested in view of the present amendment and the following argument.

A distinguishing feature of the present invention is the use of the two capacitors 10 and 13 (Fig.1) disclosed in the present specification at lines 12-29, and the capacitive coupling of the alternating electric field of the capacitor 10 (as by the presence of a person) to the capacitor 13 (page 6 at line 31 to page 7 at line 6, and page 3 at lines 26-34). The independent claims 1 and 4 have been amended to recite specifically the feature of the capacitive coupling of the alternating electric field, which feature is not disclosed in the cited art. This amendment is believed to distinguish the present invention from the cited art, particularly in view of the following argument.

In the rejections of claims 1-15 the Examiner refers especially to columns 3, 4 and 5 as well as figures 1 and 3, and states that Meier discloses all three aspects of the present invention:

- the transmitting of data over air from a transmitter unit to a receiver unit;
- the capacitive coupling of the transmitter unit and the receiver unit; and
- the generation of data to be transmitted by an alternating electric field.

It appears that only the first aspect can be found in Meier.

Meier discloses a road vehicle remote keyless entry system having an in-vehicle communication processor and a remote transponder. The communication processor has a radio frequency receiver and a low frequency transmitter/receiver, and the transponder has a radio frequency transmitter and a low frequency transmitter/receiver.

Meier discloses in col. 3, line 51 ff the following aspects:

- after a button was pressed, the transponder transmits a radio frequency signal (433 MHz) to the communication processor
- the communication processor responds with a low frequency interrogation signal (134.2 kHz) in order to verify the identity of the transponder
- the transponder responds to the interrogation signal with a low frequency signal providing an identification code.

The capacitors described in Meier are a charge capacitor (27 or 61) in the transponder and a resonant circuit capacitor within the resonant circuits (see figure 1) of the transponder 15 and

communication processor 11, respectively. The charge capacitor stores the energy necessary to enable the low frequency transmitter/receiver of the transponder (col. 5, 1. 66 ff) where the energy is transmitted via the low frequency signal received from the communication processor (col. 6, 1. 16-35). The function of the resonant circuits is to generate or to receive the low frequency signals, depending on the direction of signal transmission.

Each of the two resonant circuits consists of a capacitor and a coil. The resonant circuit of the communication processor is excited, so that it starts to oscillate and to generate an electromagnetic wave which is emitted. The electromagnetic wave results in an oscillating current and voltage within the other resonant circuit, so that this circuit is excited, too. At the frequency of 134.2 kHz, which is state of the art for passive transponders (col. 1, lines 22 ff), the functional distance between transmitter and receiver is given as 1 meter and below (col. 9, lines 47-50). Now, Meier discloses different solutions to achieve a greater functional range of about 1 to 2 meters (col. 1, 1. 44-53; col. 7, 1. 20-24 and 1. 58-62 and col. 11, 1. 49-55).

In contrast, the present invention relates to a purely capacitive coupling, where one capacitor (13) is moved into the electrical field of another capacitor (10). The electrical field is an alternating field where the amplitude and sign of a voltage applied to the capacitor 10 are changing constantly. The

capacitive field of capacitor 10 produces a voltage (no current flow) in the other capacitor 13.

Apart from these physical differences (no coil, no magnetic field, no current) also a functional difference between Meier and the present invention exists. The object of the invention is to provide a method in which, despite contactless interrogation of the identification signal transmitter, third parties cannot obtain authorizing access information. The capacitive coupling, where one capacitor has to be placed directly in the electrical field of the other, ensures that the transmission link does not come into operation until the user carrying the transmitter comes up to a close distance, possibly a few millimeters (!) close to the receiver. This high degree of security cannot be achieved with the transponder used in Meier, since it operates at about 1 to 2 meters where a third party could very well intercept the transmitted information.

Since the basic physical as well as the basic functional principles are different between Meier and the present invention, the dependent claims are neither anticipated by nor obvious over Meier.


Various ones of the dependent claims have been amended to conform to the amendment to the independent claims. This amendment is believed to overcome the grounds of rejection under 35 USC 102 and 103 so as to secure allowable subject matter in the claims.

In the event there are further issues remaining the Examiner is respectfully requested to telephone attorney to reach agreement to expedite issuance of this application.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Since the present claims set forth the present invention patentably and distinctly, and are not taught by the cited art either taken alone or in combination, this amendment is believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, enter this amendment, and to allow all of the claims in this case.


Respectfully submitted,
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CERTIFICATE OF MAILING UNDER 37 CFR SECTION 1.8(a)

I hereby certify that the accompanying Amendment is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on May 18, 2004

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